

REMARKS

Applicant appreciates the Examiner's thorough consideration provided the present application. Claims 1-28 are now present in the application. Claims 1 and 16 are independent. Reconsideration of this application is respectfully requested.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ise, U.S. Patent No. 5,528,267, in view of Ikeda, U.S. Patent No. 5,642,134. This rejection is respectfully traversed.

Independent claim 1 recites a combination of steps including “a first touch-position sensing step, which detects values of liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode, respectively, and detects a scan-line-direction touch position according to the values of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode during idling time in-between writing periods, each of the scan lines turning on sequentially to write image data into the LCD screen in the writing periods”, “a charging step, which charges a voltage signal into each of the data lines needed to be detected after the scan-line-direction touch position is detected”, “a second touch-position sensing step, which detects values of liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode, respectively, and detects a data-line-direction touch position according to the values of the liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode after the voltage signal is

charged" and "the scan-line-direction touch position and the data-line-direction touch position indicate a position of the touch point."

Independent claim 16 recites a combination of elements including "a first sensing circuit, which respectively electrically connects to the scan lines needed to be detected, detects values of liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode, and detects a scan-line-direction touch position according to the values of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode", "a timing control circuit, which electrically connects to the first sensing circuit and controls the first sensing circuit to detect the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode during idling time in-between writing periods, each of the scan lines turning on sequentially to write image data into the LCD screen in the writing periods", "a voltage-signal generating circuit, which electrically connects to the timing control circuit and each of the data lines, wherein the timing control circuit controls the voltage-signal generating circuit to charge a voltage signal into each of the data lines needed to be detected after the scan-line-direction touch position is detected" and "a second sensing circuit, which respectively electrically connects to each of the data lines needed to be detected, detects values of liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode, and detects a data-line-direction touch position according to the values of the liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode after the voltage signal is charged".

Applicant respectfully submits that the above combinations of steps and elements as set forth in independent claims 1 and 16 are not disclosed nor suggested by the references relied on by the Examiner.

Ise in col. 15, line 62 to col. 16, line 8 and FIG. 16 discloses that a TFT corresponding to a pixel is selected from the row electrodes y1 to yn and the column electrodes x1 to xm, and that a voltage inverted in each frame is applied only to a specified pixel for displaying the pixel. Each of the row electrodes y1, y2, ..., yn is connected to a source of each of TFT 11 to TFT 1m, TFT 21 to TFT 2m, ..., and TFT n1 to TFT nm (i.e., the row electrodes are data lines of the TFT liquid crystal matrix panel), while each of the column electrodes x1, x2, ..., xm is connected to a gate of each of the TFT 11 to TFT 1m, TFT 21 to TFT 2m, ..., and TFT n1 to TFT nm (i.e., the column electrodes are scan lines of the TFT liquid crystal matrix panel). A drain of each of the TFT 11 to TFT nm is connected to each of the liquid crystal pixel electrodes. In addition, as shown in FIG. 17 of Ise, the COORDINATE y DETECTION MODE is performed before the COORDINATE x DETECTION MODE. In other words, Ise simply discloses that the data lines detecting step is before the scan lines detecting step.

However, in the claimed invention as recited claim 1, a touch-control method of an LCD comprises a first touch-position sensing step, a charging step and a second touch-position sensing step. The first touch-position sensing step detects values of liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode, respectively, and detects a scan-line-direction touch position according to the values of the liquid crystal capacitances formed between the scan lines needed to be detected and the counter electrode during idling time in-between writing periods, each of the scan lines turning on sequentially to write image data

into the LCD screen in the writing periods. The charging step charges a voltage signal into each of the data lines needed to be detected after the scan-line-direction touch position is detected. The second touch-position sensing step detects values of liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode, respectively, and detects a data-line-direction touch position according to the values of the liquid crystal capacitances formed between the data lines needed to be detected and the counter electrode after the voltage signal is charged, wherein, the scan-line-direction touch position and the data-line-direction touch position indicate a position of the touch point.

In addition, as disclosed in paragraph [0033] of the present invention, a voltage signal is charged into each of the data lines needed to be detected after the scan-line-direction touch position Y has been detected. In such a case, the voltage signal causes the RMS voltages between the data lines and the counter electrode panel to have the same value.

As mentioned above, the first touch-position sensing step (the scan lines detecting step) is before the second touch-position sensing step (the data lines detecting step) in the claimed invention, which is different from the Ise reference.

With regard to the Examiner's reliance on Ikeda, this reference has only been relied on for its teachings of the counter electrode panel. This reference also fails to disclose the above combinations of steps and elements as set forth in independent claims 1 and 16. Accordingly, Ikeda fails to cure the deficiencies of Ise.

Accordingly, neither of the references utilized by the Examiner individually or in combination teaches or suggests the limitations of independent claims 1 and 16 or their dependent claims. Therefore, Applicant respectfully submits that independent claims 1 and 16

and their dependent claims clearly define over the teachings of the references relied on by the Examiner.

Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 103 are respectfully requested.

CONCLUSION

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but merely to show the state of the prior art, no further comments are necessary with respect thereto.

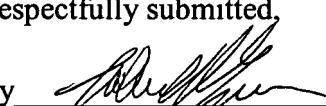
It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

In the event there are any matters remaining in this application, the Examiner is invited to contact Joe McKinney Muncy, Registration No. 32,334 at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: July 16, 2007

Respectfully submitted,

By 
Joe McKinney Muncy ROBERT F. GAUSE
Registration No.: 32,334 Registration # 272290
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant
